FIG. 1

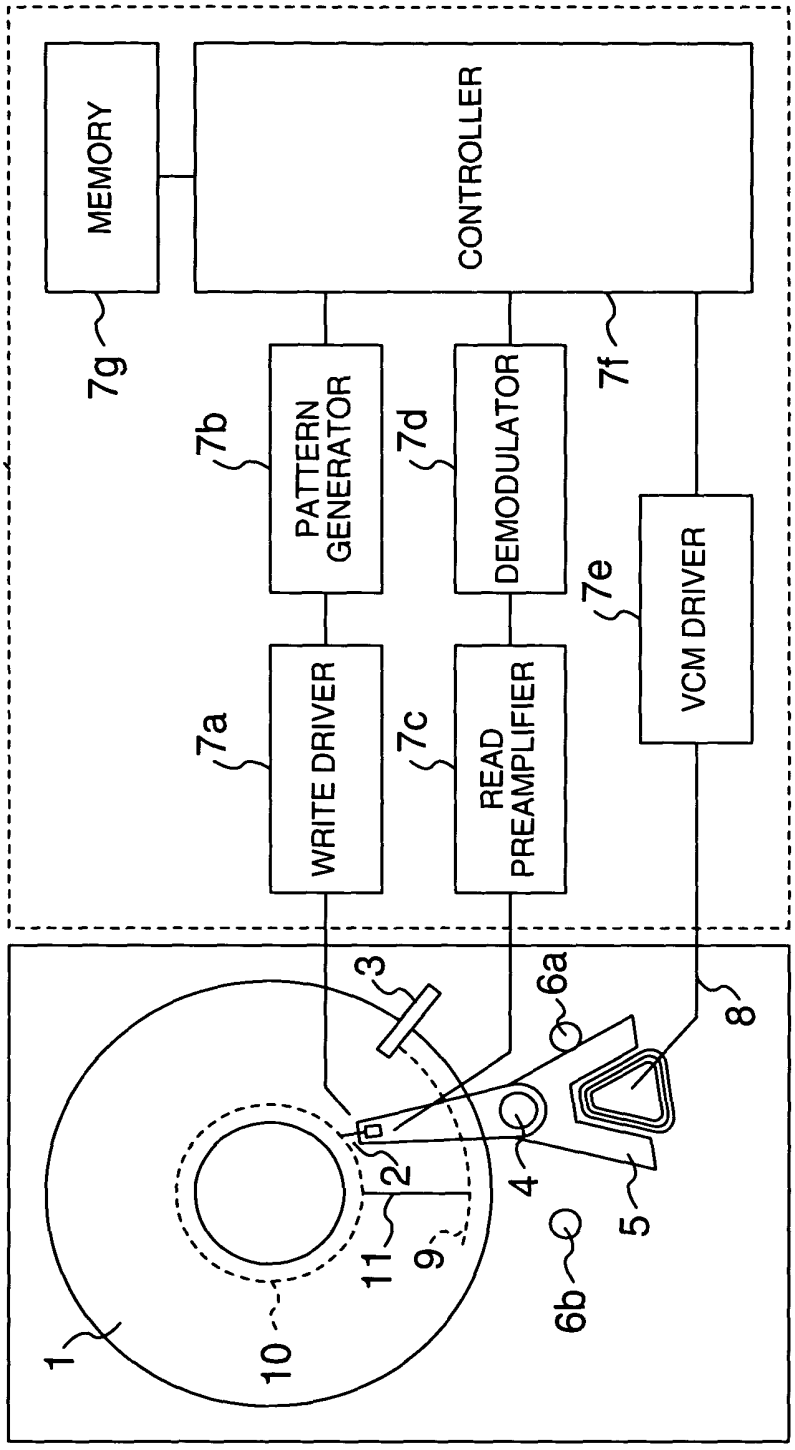

7
MEMORY
CONTROLLER
7g
7f
7b
PATTERN GENERATOR
7d
DEMODULATOR
7e
VCM DRIVER
7a
WRITE DRIVER
7c
READ PREAMPLIFIER
3
6a
8
2
4
5
11
9
6b
1
10

FIG. 2

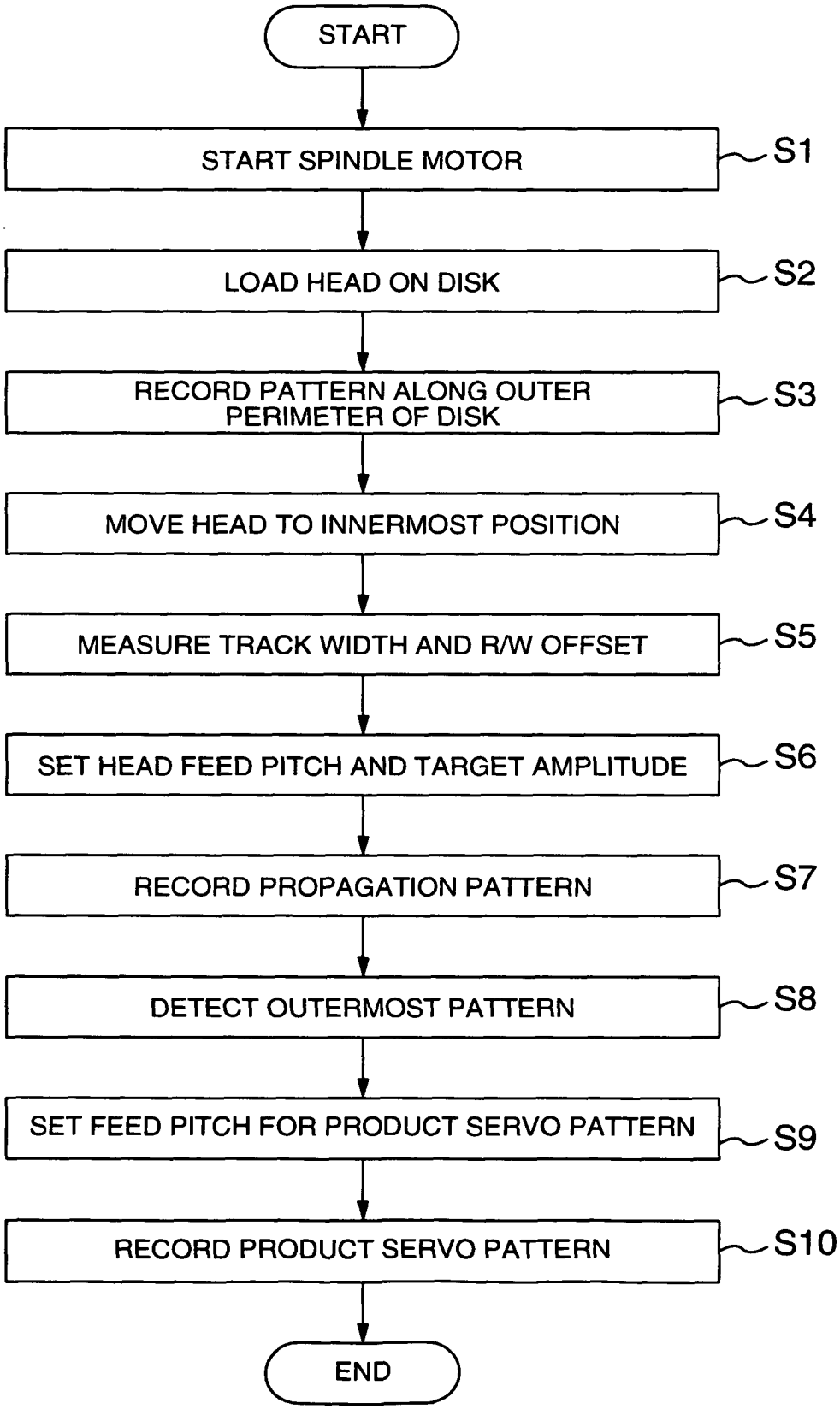

START
START SPINDLE MOTOR
S1
LOAD HEAD ON DISK
S2
RECORD PATTERN ALONG OUTER PERIMETER OF DISK
S3
MOVE HEAD TO INNERMOST POSITION
S4
MEASURE TRACK WIDTH AND R/W OFFSET
S5
SET HEAD FEED PITCH AND TARGET AMPLITUDE
S6
RECORD PROPAGATION PATTERN
S7
DETECT OUTERMOST PATTERN
S8
SET FEED PITCH FOR PRODUCT SERVO PATTERN
S9
RECORD PRODUCT SERVO PATTERN
S10
END

FIG. 3

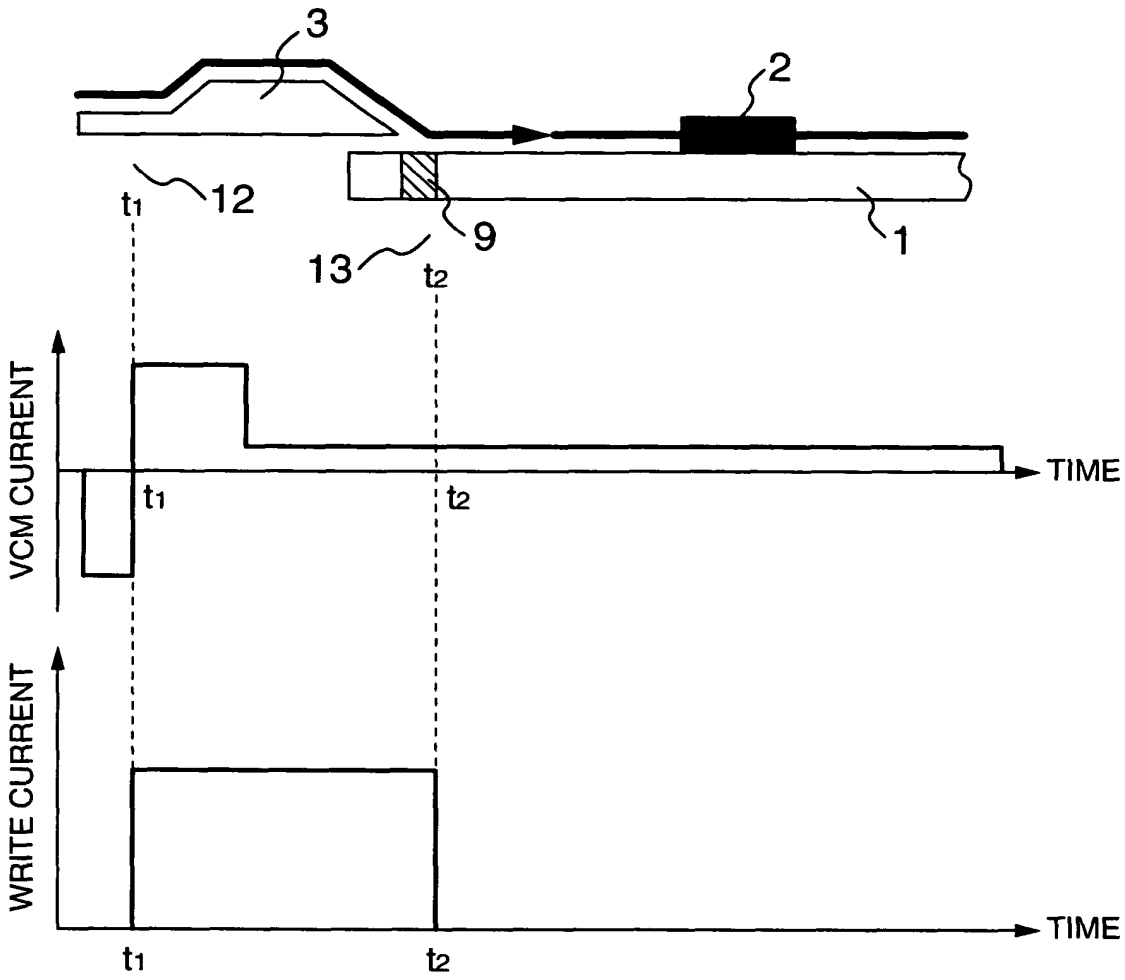

3
2
12
t1
9
13
t2
1
VCM CURRENT
TIME
t1
t2
WRITE CURRENT
TIME
t1
t2

FIG. 4

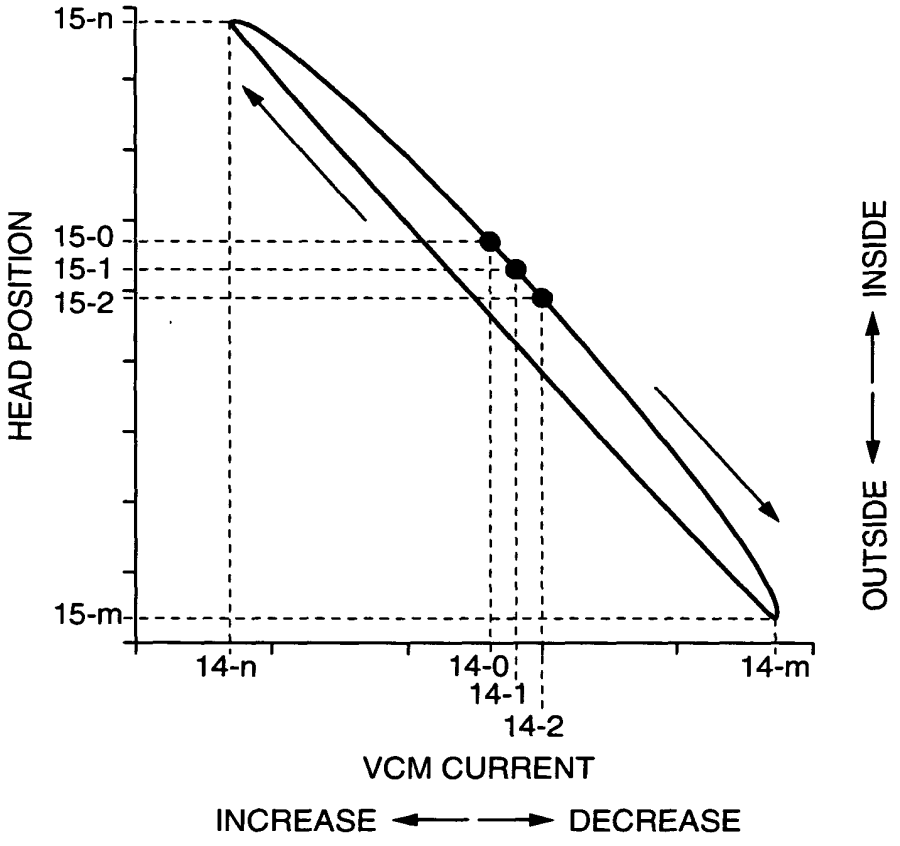

15-n
15-0
15-1
15-2
15-m
HEAD POSITION
OUTSIDE
INSIDE
14-n
14-0
14-1
14-2
14-m
VCM CURRENT
INCREASE
DECREASE

FIG. 5

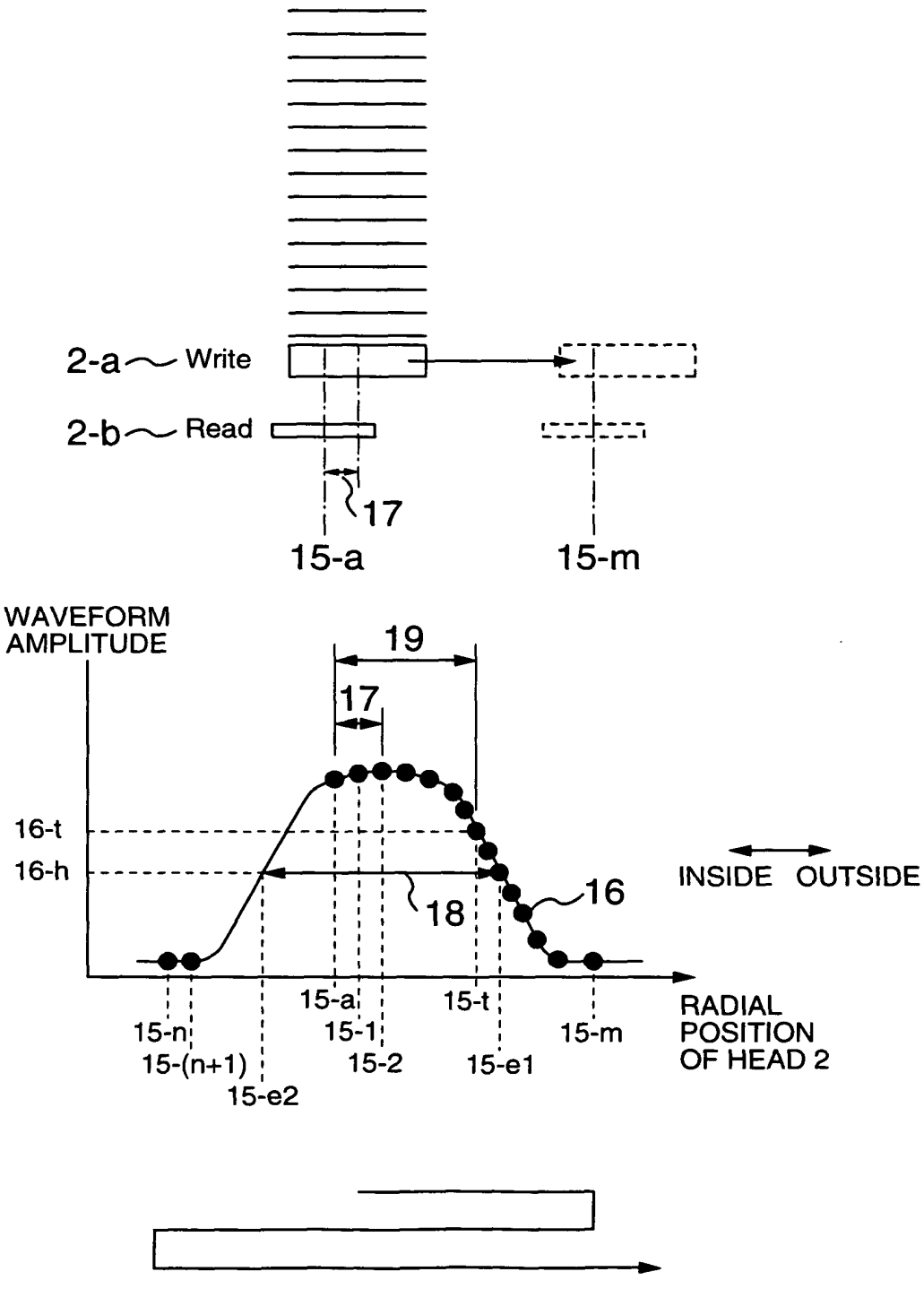

2-a
Write
2-b
Read
17
15-a
15-m
WAVEFORM AMPLITUDE
19
17
16-t
16-h
18
16
INSIDE OUTSIDE
15-n
15-(n+1)
15-e2
15-a
15-1
15-2
15-t
15-e1
15-m
RADIAL POSITION OF HEAD 2

FIG. 6

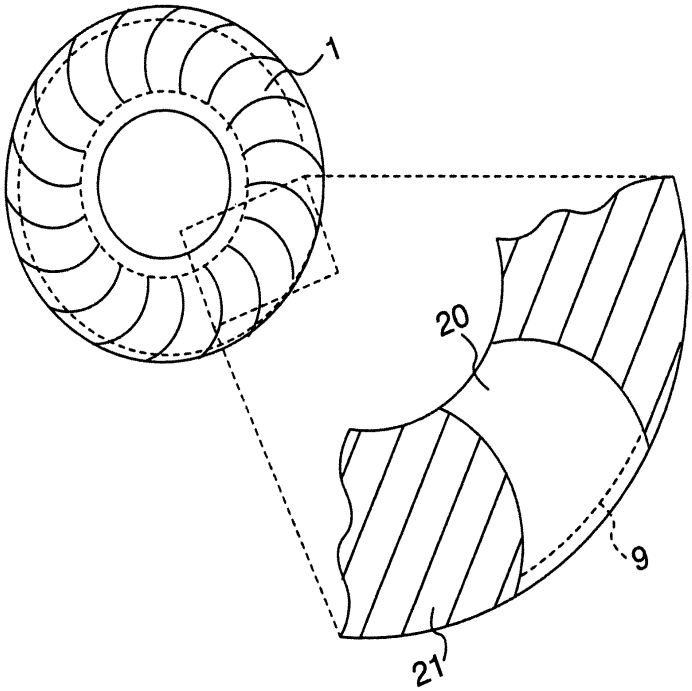


FIG. 7

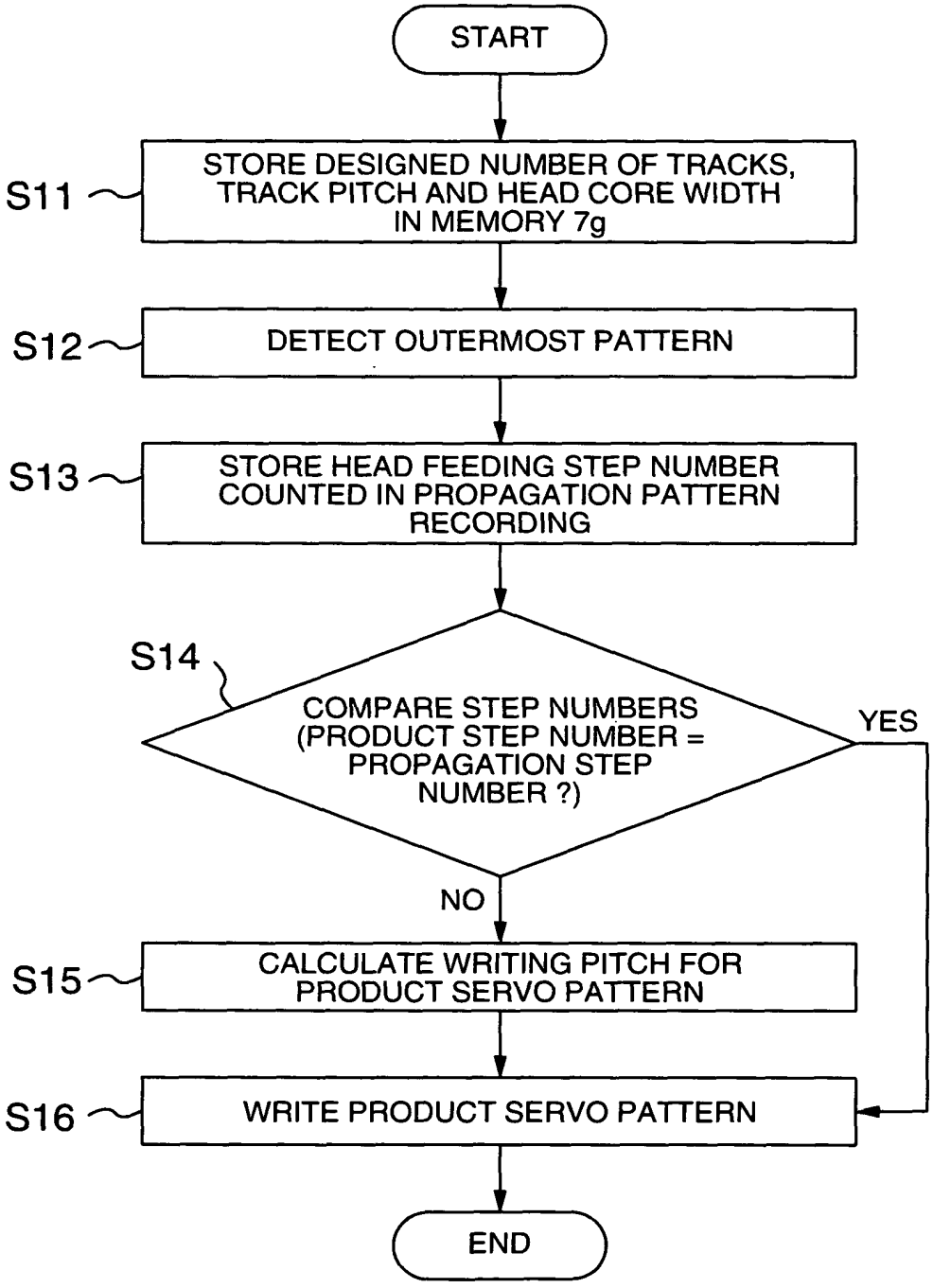

START
S11
STORE DESIGNED NUMBER OF TRACKS, TRACK PITCH AND HEAD CORE WIDTH IN MEMORY 7g
S12
DETECT OUTERMOST PATTERN
S13
STORE HEAD FEEDING STEP NUMBER COUNTED IN PROPAGATION PATTERN RECORDING
S14
COMPARE STEP NUMBERS (PRODUCT STEP NUMBER = PROPAGATION STEP NUMBER ?)
YES
NO
S15
CALCULATE WRITING PITCH FOR PRODUCT SERVO PATTERN
S16
WRITE PRODUCT SERVO PATTERN
END

FIG. 8

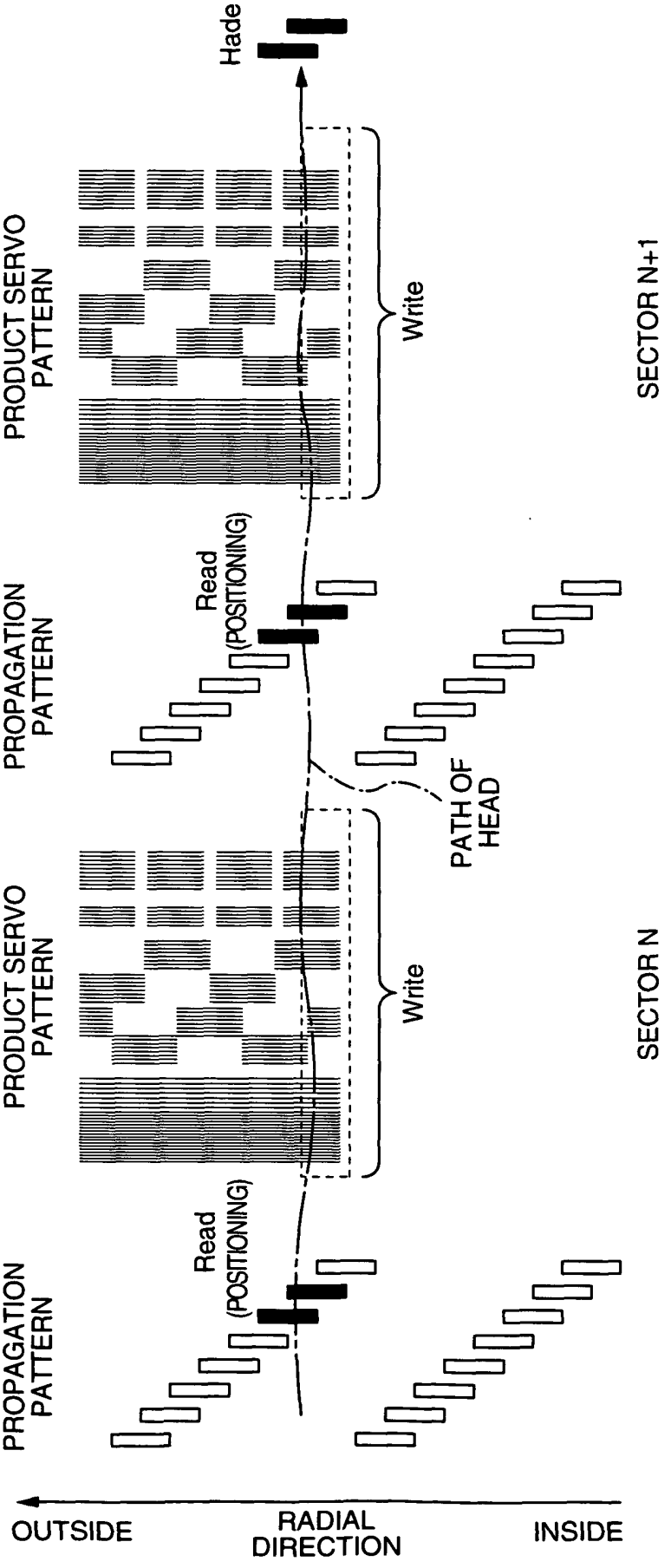

Hade
PRODUCT SERVO PATTERN
Write
SECTOR N+1
PROPAGATION PATTERN
Read (POSITIONING)
PATH OF HEAD
23
PRODUCT SERVO PATTERN
Write
SECTOR N
22
PROPAGATION PATTERN
Read (POSITIONING)
OUTSIDE
RADIAL DIRECTION
INSIDE

FIG. 9

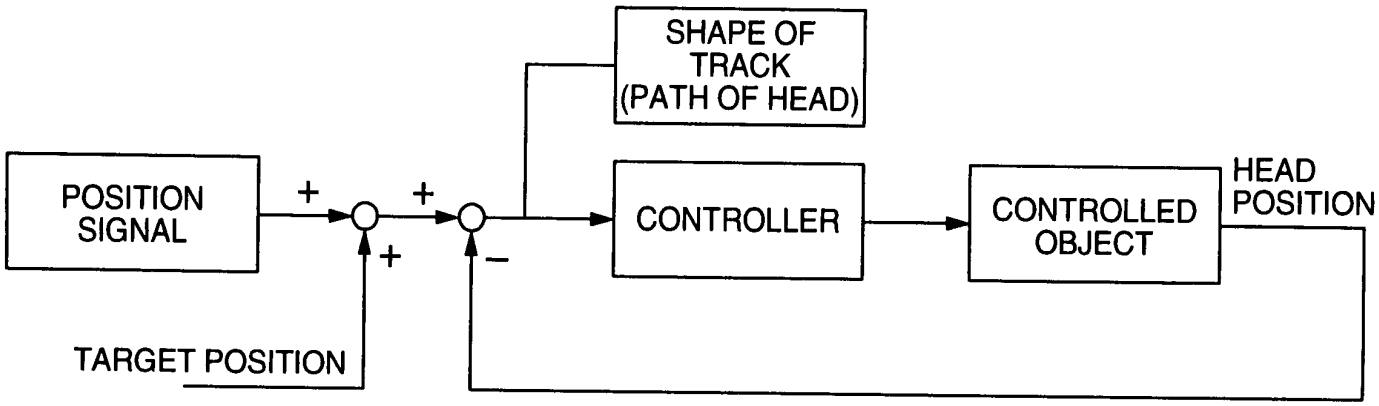

SHAPE OF TRACK (PATH OF HEAD)
POSITION SIGNAL
+
+
+
−
CONTROLLER
CONTROLLED OBJECT
HEAD POSITION
TARGET POSITION

FIG. 10

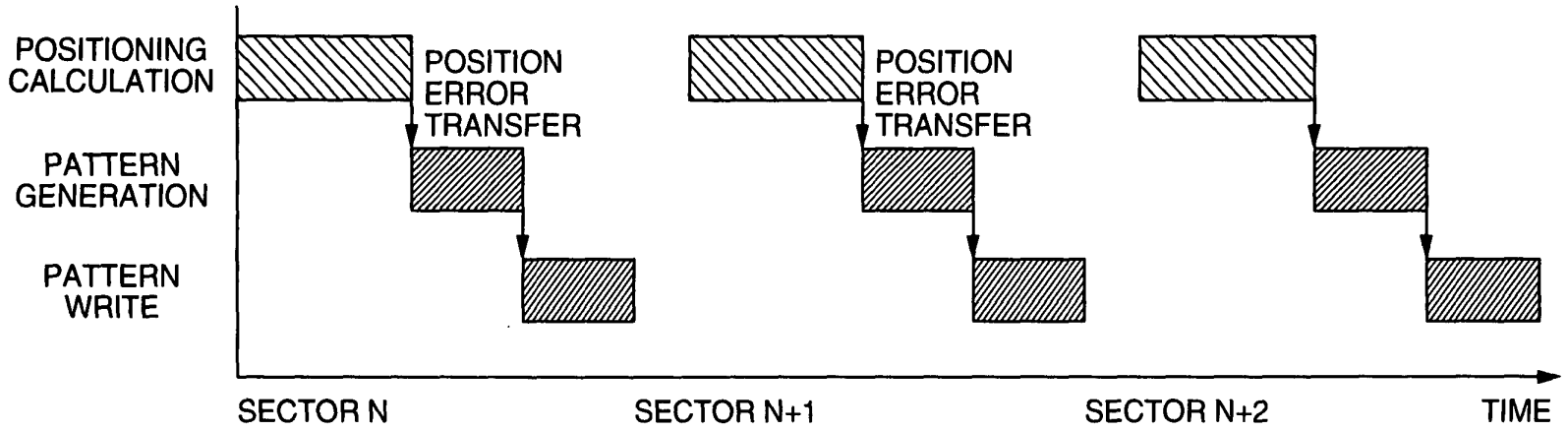
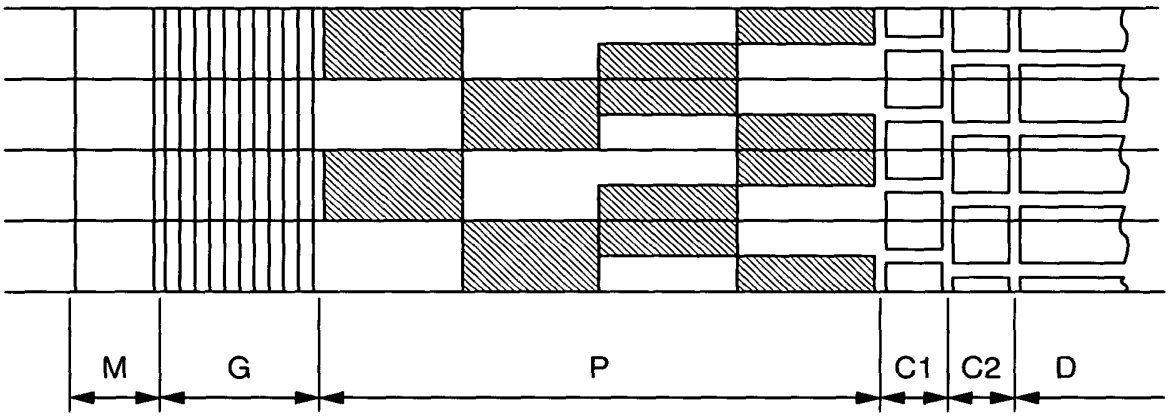

POSITIONING CALCULATION
PATTERN GENERATION
PATTERN WRITE
POSITION ERROR TRANSFER
POSITION ERROR TRANSFER
SECTOR N
SECTOR N+1
SECTOR N+2
TIME

FIG. 11



M: SECTOR MARKER/ SYNCHRONIZATION AREA
G: GRAY CODE AREA
P: POSITION SIGNAL AREA
C1: CORRECTION DATA FOR WRITING
C2: CORRECTION DATA FOR READING
D: DATA AREA